# Top 10 Supply Chain Trends

2024

ASCM ASSOCIATION FOR SUPPLY CHAIN MANAGEMENT

# Introduction

The ground continues to shift beneath the feet of supply chain professionals. In an era of constant disruption, rapid digitization and growing consumer demands, the old ways of managing networks are nowhere near enough. That's where the ASCM Supply Chain Trends for 2024 come in. This carefully curated list from ASCM's Innovation and Strategy Sensing Subcommittee unveils the key forces shaping the future of supply chains. From harnessing the power of data and AI to building agile and resilient networks, the trends outlined in this report are not just predictions, but imperatives for supply chain success in 2024 and beyond.

# New Trends and Changes, Year Over Year

| 2024 Trend Ranking | | Change from 2023 |
|---|---|---|
| 1 | Digital supply chain | 1↑ |
| 2 | Big data and analytics | 1↓ |
| 3 | Artificial intelligence | 1↑ |
| 4 | Supply chain investment (systems and people) | New in 2024 |
| 5 | Visibility, traceability and location intelligence | New in 2024 |
| 6 | Disruption and risk management | 3↓ |
| 7 | Agility and resilience | New in 2024 |
| 8 | Supply chain cyber security | 2↓ |
| 9 | Green and circular supply chains | 2↓ |
| 10 | Geopolitical and deglobalization of supply chains | New in 2024 |

# Overall Theme for 2024: Supply Chain Architecture

The global supply chain management application market is projected to reach nearly $31 billion by 2026, demonstrating the importance of investing in supply chain architecture. Several key trends will shape the future, including digital supply chain, big data and analytics, and visibility and traceability. These fundamental pillars will necessitate the development of new skills and knowledge among your workforce, particularly related to the Supply Chain Operations Reference Digital Standard (SCOR DS). This shift is driven by the realization that enablement must play a more prominent role in supply chain orchestration.

# 1

## Digital supply chain

Converting data from a physical to a digital format enables the internet of things, artificial intelligence, blockchain and smart contracts, cloud-based solutions, and countless other emerging technologies that rely on high-quality digital inputs. In the coming year, more supply chain organizations will transform their networks into connected, intelligent, scalable, customizable and nimble digital ecosystems. Some will achieve holistic digital transformation, while others will advance more slowly by balancing long-term investment in automation with the immediate implementation of solutions that reduce repetitive tasks and cognitive fatigue while allowing employees to focus on areas where humans perform better than machines.

2

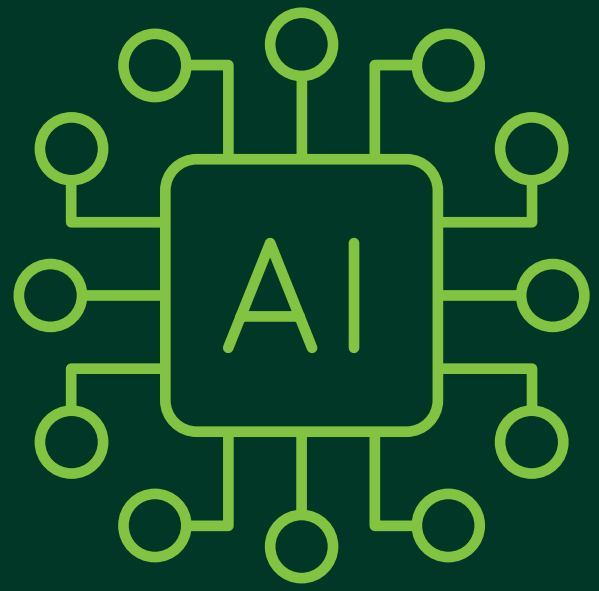
## Big data and analytics

Through supply chain big data and analytics, organizations will more easily identify inefficiencies, reduce costs, improve customer service, and strengthen resilience and agility to cope with frequent disruption. Applications include using standardized freight data exchange to deliver operational efficiencies, optimize routes and port planning, and reduce emissions and costs; sales and marketing data to better predict demand, enhance inventory management practices and improve the customer experience; data from sensors and digital twins to identify potential problems, advance predictive maintenance and optimize product performance. To maximize the potential of big data and analytics, supply chains must prioritize data exchange and information-sharing.

# 3

## Artificial intelligence

Advances in artificial intelligence (AI) are happening at an unprecedented rate and offering numerous immediate returns — particularly in the areas of intelligent sourcing, inventory management and logistical route-planning. Cobots drive warehousing efficiency through picking and packing, loading and unloading, and moving heavy objects; computer vision supports defect detection and object recognition; robotics enable safer assembly and welding; and augmented reality advances training, maintenance and quality control. Meanwhile, machine learning (ML), a subset of AI that allows computers to learn without being explicitly programmed, will be used to make predictions and decisions about demand forecasting, quality control, new product development and much more.



4

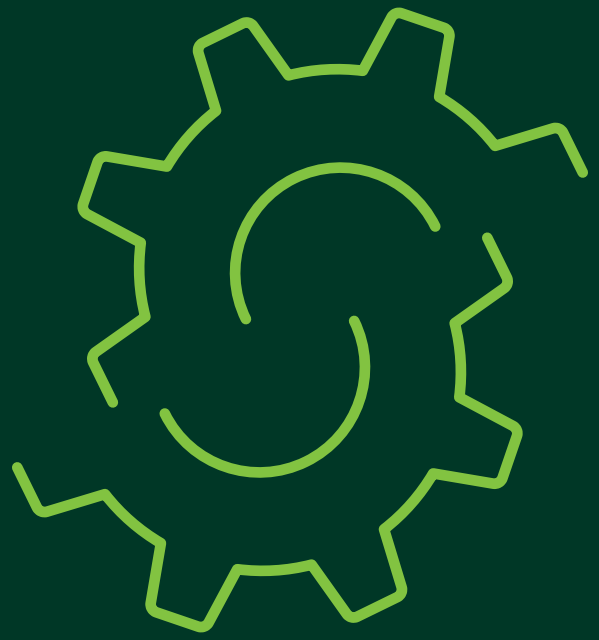
## Investment in systems and people

By 2026, the global supply chain management application market is expected to reach almost $31 billion. As the adoption of supply chain tech escalates, it will continue bringing about key insights from enhanced automation, internet-of-things data, blockchain, supply-chain-as-a-service, cloud-based solutions and more. These technologies are optimizing networks, supporting sustainability, improving partner collaboration, enhancing visibility, and helping organizations become more flexible and agile. In 2024, essential investments in people through training and development on the latest tech will create a culture of innovation and encourage employees to share ideas that lead to real supply chain success.

# 5

## Visibility, traceability and location intelligence

Supply chain visibility and traceability enable organizations to track the movement of goods and materials through every tier of the supply chain — from product origin through its various stages to final destination. As a result, stakeholders will enjoy greater access to near-real-time data related to orders, inventory, delivery and potential disruptions. At the same time, location intelligence will help provide essential context about the current state of their networks. This, combined with AI — and its subset, ML — has the potential to significantly improve the prediction of future conditions based on past delays, traffic and weather patterns, port and highway bottlenecks, and so on.



# 6

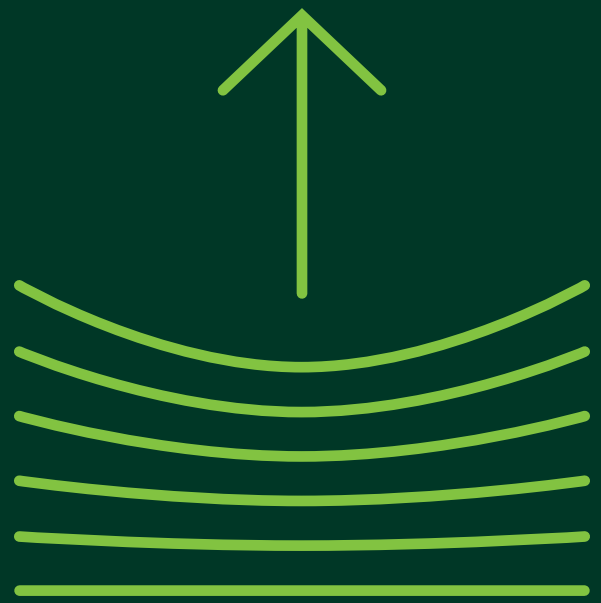
## Disruption and risk management

Supply chain disruption is now the norm, with continued congestion of transportation and logistics infrastructure, geopolitical shifts, natural disasters and extreme weather, raw material shortages, a global pandemic — the list goes on. Instead of addressing issues as they arise, organizations are learning how to constantly prepare for disruption through effective risk management. This involves identifying and assessing both internal and external risks; developing mitigation strategies, such as diversifying suppliers, building up inventory and improving visibility; testing and rehearsing plans to identify any gaps and make necessary adjustments; communicating with stakeholders about risk management; and continually monitoring and updating plans to ensure they're always up-to-date and effective.

7

## Agility and resilience

Our consumer-centric world requires a different type of supply chain — one that's able to predict, prepare and respond to rapidly evolving demand and product and channel mix. As such, supply chain agility will require new capabilities and tools, including machines capable of faster changeovers and handling a wider range of products and shipment types, collaborative robots, smart packaging, and others. Skilled, flexible workforces will be essential, as more humans program and work alongside these advanced technologies and cross-functional teams collaborate to solve problems in short, incremental sprints. All of this will foster supply chain resilience, a 2024 strategic priority that must be embedded with digitization, optimization, sustainability and talent development.



# 8

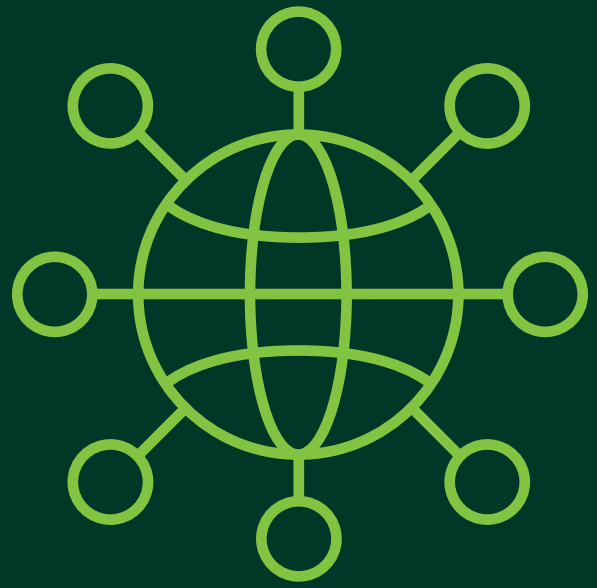
## Cybersecurity

Modern supply chains are global, and so are the threats they face. Cybercriminals are not bound by geography and can target any entry or access point in the supply chain, driving the need for cybersecurity to be a core part of digital and intelligent networks. An alarming increase in cybercrime is likely to continue, leading to more data breaches, delays and shortages, reputational damage, compliance issues, safety risks, and financial loss. Supply chain professionals must safeguard their networks by staying up to date on best practices; using a risk-based approach to cybersecurity; and investing in cybersecurity solutions, training and awareness.

# 9

## Green and circular supply chains

Many supply chain organizations have set ambitious goals to become carbon neutral and achieve net-zero waste and water objectives in the near future. At the same time, increasing pressure from consumers, employees, investors, governments and regulators will compel others to carefully consider the sustainability of their future operations. To achieve green and circular supply chains, organizations must ensure change can take root across the end-to-end value chain. This will involve partner collaboration, implementation of the right tech, educating employees, setting clear tracking targets, measuring impact, identifying areas for improvement, and reporting on progress in order to be held accountable.



# 10

## Geopolitics and the deglobalization of supply chains

Geopolitical conflicts including war, economic and technological competition and related security concerns, and the need for countries to mitigate the effects of climate change all will continue to cause supply chain disruption. As a result, more regional supply chains will turn to simpler networks through nearshoring and friend-shoring, which are based on models of trust between nations that tend to share similar values and beliefs. This deglobalization may result in improved security and resilience; however, it's also likely to raise prices, limit choice and reduce innovation due to smaller market sizes.

# The Sensing Process

1. Create a deep and diverse team of supply chain subject matter experts representing a variety of industries, academic institutions, geographies and personal experiences.

2. Identify resources from a broad collection of high-quality research reports and articles, Google analytics, surveys, subject matter expert knowledge, and more. This includes 419 citations, more than 2,000 pages of research and over 200 unique resources. The list is consolidated, and any gaps are filled.

3. Assign each team member a set of resources from which to extract trends. For each trend identified, a brief explanation of its relevance to the future of supply chain is written.

4. Rank trends into a top 10 list through discussion followed by a vote of each trend's likelihood and its potential impact, using a 0-10 scale. Along the way, 209 subtrends are eventually narrowed down to the top 10.

# Trend Impact and Likelihood

# 2024 Top Supply Chain Trends

## Likelihood x Impact = Criticality

| Trend Ranking | | Scoring |
|---|---|---|
| 1 | Digitization | 2235 |
| 2 | Big Data and Analytics | 2109 |
| 3 | Artificial Intelligence and Machine Learning | 1969 |
| 4 | Supply Chain Investment (systems and people) | 1869 |
| 5 | Visibility, Traceability, Location Intelligence | 1828 |
| 6 | Supply Chain Disruption and Risk Management | 1690 |
| 7 | Supply Chain Resilience and Agility | 1638 |
| 8 | Supply Chain Cyber Security | 1632 |
| 9 | Green and Circular Supply Chains | 1597 |
| 10 | Geopolitical and De-Globalization Supply Chains | 1475 |

| Trend Ranking | | Scoring |
|---|---|---|
| 11 | Adaptive Shoring Supply Chain Network | 1404 |
| 12 | Supply Chain Robotization and Automation | 1401 |
| 13 | Flexible Supply Chain Partnerships and Collaboration | 1371 |
| 14 | Next-Generation Transportation and Sustainable Logistics | 1366 |
| 15 | Self-Stabilizing and Demand Sensing Supply Chains | 1264 |
| 16 | Advanced Additive and Smart Manufacturing Supply Chains | 1149 |
| 17 | Intelligent Supply Chain Center | 1135 |
| 18 | Next Generation of Supply Chain Architects | 1115 |
| 19 | Future Retails Supply Chains | 970 |

# Innovation and Strategy Committee Sensing Subcommittee

**Jit Hinchman, CSCP**
Sensing Subcommittee Chair, Founder, Supply Chain Adviser

**Matt Talbert, MPA**
ASCM Staff Liaison, ISC, Senior Research Manager, ASCM

**Amy Augustine, CSCP, ASCM Board Member**
Senior Director Network Supply Chain Design, US Cellular
US Cellular

**Cara Curtland**
Data Science Strategist, HP

**Shawn Tay**
Supply Chain Advanced Analytics and M&A Integration Manager, HP

**Will Thrasher**
Director, Client Partner, ArchLynk

**Sreejith Sreedharan**
Practice Head and Solution Owner
Cyient

**Javier Peña, MBA**
Profesor de Cadena de Suministro Universidad del Valle de Guatemala

**Anthony Broderick, CSCP**
Corporate Buyer
Global Supply Chain
US Foods

**Mehdi Ouici**
Independent Supply Chain Consultant – TRANSAVIA
(Air France Group)

**Ryan Wicklum**
Territory Account Manager, ProGlove

**Nitin Saini**
Supply Chain Manager, Prime Source Building Products

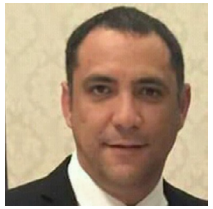
**Armand van Oostrom MBA M.Econ**
Senior Lecturer,
The Hague University of Applied Sciences

**Andrei Armanca**
Procurement Manager, Ochsner Health

**Meka Praveen, CSCP**
Associate Manager, Biocon

**Jack Alden**
Business Architecture Specialist, Accenture

# Innovation and Strategy Committee Sensing Subcommittee



**Osvaldo Elizondo, CPIM, CSCP, CLTD**
Advanced Value Chain Institute

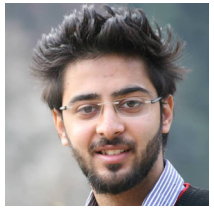
**Lucille Docter**
Senior Manager, Supply Chain Planning, US Cellular

**Johnatas Montezuma**
Program Manager, A.P. Moller - Maersk

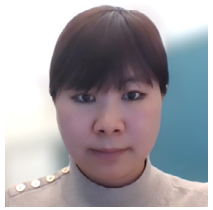
**Ric Wade, CSCP**
Supply Chain Inventory Operations, US Cellular

**Luis Mondragao**
Digital Supply Chain and Operations Manager

**Ingo Weidmann**
HSEQ Manager, ARDEX



**Sidharath Joshi**
Doctoral candidate at Asian Institute of Technology



**Dr. Xiaotong Liu**
Assistant Professor, California State University

**David H. Thoma**
Founder, DCT Solutions, Inc.

**Michael Mowat**
Supply Chain Consulting Lead, IBM

**Majush K Philip, CPIM**
Senior Product Manager, EdgeVerve

**Adeyinka Banjo**
Head, Group Procurement, Sarah Group Limited

**Mark Almond**
Supply Chain Director, Reintechnik

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